416-500 British

230/273 416/500

389,939

389,939 COMPLETE SPECIFICATION

1 SHEET

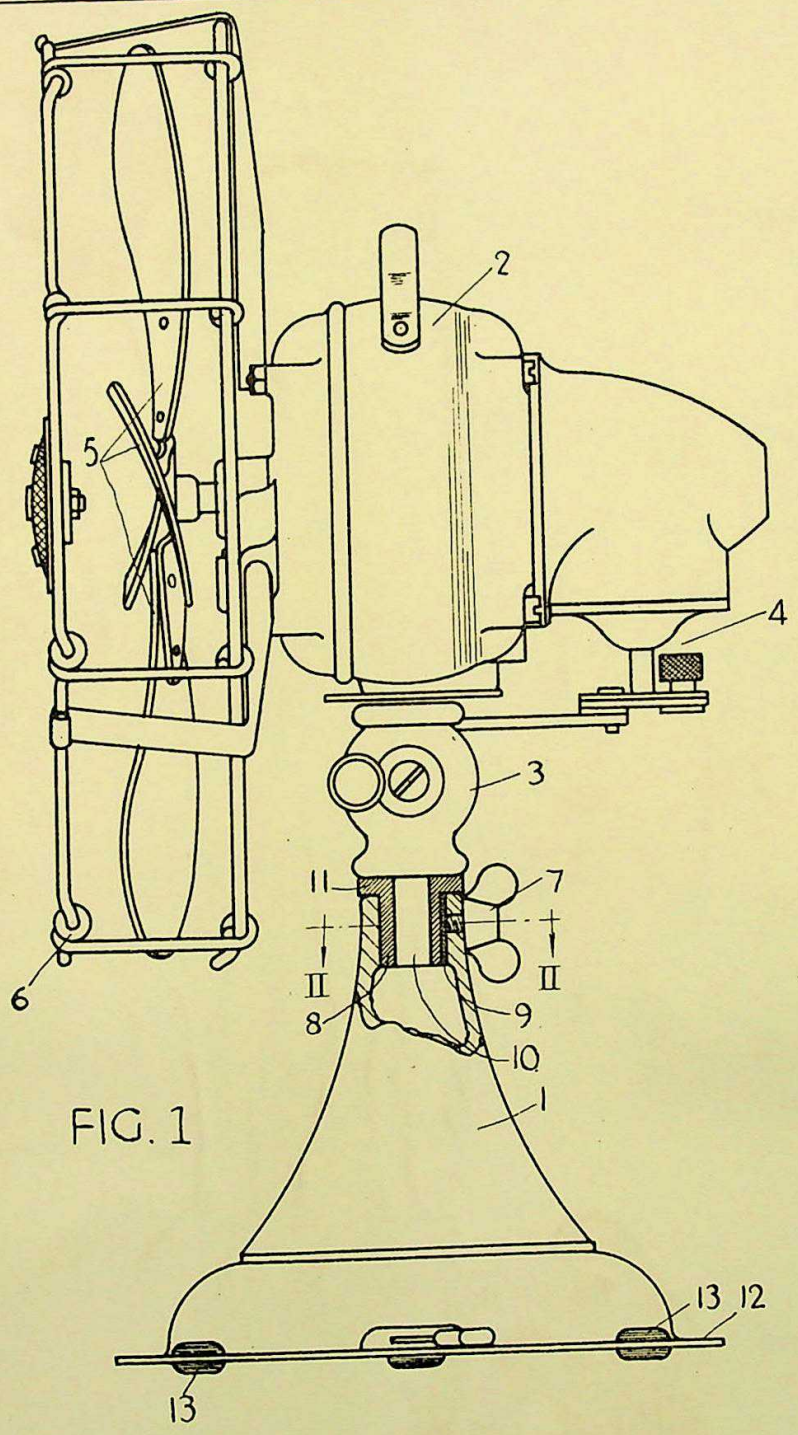

FIG. 1

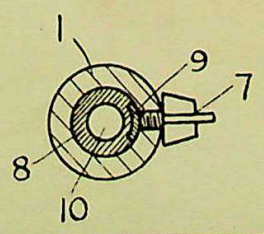

FIG. 2

[This Drawing is a reproduction of the Original on a reduced scale.]

Malby & Sons, Photo Litho

PATENT SPECIFICATION

Application Date : Jan. 4, 1932. No. 232/32. 389,939

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Complete Accepted: March 30, 1933.

EXAMINER'S COPY
Div. 9

PROVISIONAL SPECIFICATION.

Improvements in or relating to Electric Fans.

We, The General Electric Company Limited, of Magnet House, Kingsway, London, W.C.2, a British company, and Norman Frank Tilbury Saunders, of The General Electric Company Limited, Engineering Works, Witton, Birmingham, a British subject, do hereby declare the nature of this invention to be as follows :—

This invention relates to electric fans such, for example, as those commonly called " desk " fans and used for circulating the air of rooms. In operation, more particularly in the case of a fan the motor of which is connected to an alternating current supply, a hum is set up in the motor and if it happens that the fan is placed upon or secured to the surface of a body which resonates at the frequency of the hum the noise may be such as to be objectionable and an object of the invention is to overcome this difficulty.

In an electric fan comprising an electric motor and a base or support for the motor according to the present invention the connection between the motor and the base includes vibration isolating means.

In one arrangement interposed between the base and a part of or associated with the motor adapted to cooperate with the base are resilient vibration damping means.

The base is of bell shape and the motor is supported on a joint member and is associated with suitable oscillating gear for moving the motor, together with the fan blades driven thereby, relatively to the joint member whilst the fan is in operation. The fan blades may be of conventional shape and are surrounded by a guard.

The joint member is pivoted to the base and may be clamped in a selected position by means of a screw. The pivot is provided with a bush or lining of rubber or like equivalent material separating the complementary parts of the pivot. The clamping screw for securing the motor in a selected position relatively to the base is arranged to bear on a guard such as a segment of steel disposed between the end of the screw and the outer face of the bush.

The pivot is formed by a spigot which extends axially from the bottom of the joint member and by a cylindrical hole in the upper end of the base. The hole is of considerably larger diameter than the spigot and fitting fairly tightly between the spigot and the surface of the hole is the rubber bush which also includes a portion disposed between the bottom of the joint member and the upper end of the base. The said portion may be constituted by a radial flange on the top end of the bush or it may be provided by using a washer separate from the cylindrical part of the bush. The outer wall of the cylindrical part of the bush may be formed with an axial slot for the reception of the steel segment. The clamping screw of course screws through the upper end of the base into the cylindrical hole.

The bottom of the base is formed with a radial flange from the bottom of which extend rubber studs on which the base rests.

In a modified arrangement the fan is non-oscillating, but an intermediate member allows the position of the motor to be regulated by turning it about vertical and horizontal pivots. The vertical pivot is formed at the junction of the base and intermediate member and two horizontal pivots are provided between the motor and the intermediate member near the ends of two arms of that member which extend on opposite sides of the motor. Both horizontal pivots are provided with rubber bushes which may be arranged in a manner similar to that described above.

According to a feature of the invention two or more vibration isolating means are arranged in series. Thus in the embodiments described above between the motor and the table or other object on which the fan stands are the bush or bushes and the studs. If desired in the modified arrangement a further vibration isolating means may be provided in the form of a rubber bush at the vertical pivot.

Means may be provided for compressing a bush longitudinally and for varying the degree of compression.

[*Price* 1/-]

Dated the 4th day of January, 1932

For the Applicants,
A. C. PRICE,
Chartered Patent Agent.

COMPLETE SPECIFICATION.

Improvements in or relating to Electric Fans.

We, THE GENERAL ELECTRIC COMPANY LIMITED, of Magnet House, Kingsway, London, W.C.2, a British company, and NORMAN FRANK TILBURY SAUNDERS, of The General Electric Company Limited, Engineering Works, Witton, Birmingham, a British subject, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to electric fans such, for example, as those commonly called "desk" fans and used for circulating the air of rooms. In operation, more particularly in the case of a fan the motor of which is connected to an alternating current supply, a hum is set up in the motor and if it happens that the fan is placed upon or secured to the surface of a body which resonates at the frequency of the hum the noise may be such as to be objectionable and an object of the invention is to overcome this difficulty.

In an electric fan comprising an electric motor and a base or support for the motor according to the present invention the connection between the motor and the base includes vibration isolating means.

In one arrangement interposed between the base and a part of or associated with the motor adapted to cooperate with the base are resilient vibration damping means.

When the electric motor is rotatably mounted, about an axis, on the base or support, the pivot or each pivot on the axis may be provided with a bush or lining of rubber or like equivalent material separating the complementary parts of the pivot. A clamping screw for securing the motor in a selected position relatively to the base or support may be arranged to bear on a guard such as a segment of steel disposed between the end of the screw and the outer face of the bush with which the clamping screw is associated.

The invention will now be described, by way of example, with reference to the accompanying drawings of which Figure 1 is a side elevation of an electric desk fan with the top of the base shown in central section to show the rotatable mounting and Figure 2 is a section on the line 11—11 of Figure 1.

As shown the base 1 is of bell shape and the motor 2 is supported on a joint member 3 and is associated with suitable oscillating gear 4 for moving the motor 2, together with the fan blades 5 driven thereby, relatively to the joint member 3 whilst the fan is in operation. The fan blades 5 may be of conventional shape and are surrounded by a guard 6. The fan, motor and oscillating gear are of known form and further description of these parts is therefore unnecessary.

The joint member 3 is pivoted to the base 1 and may be clamped in a selected position by means of a screw 7. The pivot is provided with a bush or lining 8 of rubber or like equivalent material separating the complementary parts of the pivot. The clamping screw 7 for securing the motor in a selected position relatively to the base 1 is arranged to bear on a guard such as a segment 9 of a steel disposed between the end of the screw 7 and the outer face of the bush 8.

The pivot is formed by a spigot 10 which extends axially from the bottom of the joint member 3 and by a cylindrical hole in the upper end of the base 1. The hole is of considerably larger diameter than the spigot 10 and fitting fairly tightly between the spigot 10 and the surface of the hole is the rubber bush 8 which also includes a portion 11 disposed between the bottom of the joint member 3 and the upper end of the base 1. The said portion 11 may be constituted by a radial flange on the top end of the bush 8 or it may be provided by using a washer separate from the cylindrical part of the bush. The outer wall of the cylindrical part of the bush may be formed with an axial slot for the reception of the steel segment 9. The clamping screw 7 of course screws through the upper end of the base 1 into the cylindrical hole.

The bottom of the base 1 is formed with a radial flange 12 from the bottom of which extend rubber studs 13 on which the base rests.

In a modified arrangement the fan is non-oscillating, but an intermediate member allows the position of the motor to be regulated by turning it about vertical and

horizontal pivots. The vertical pivot is formed at the junction of the base and intermediate member and two horizontal pivots are provided between the motor and the intermediate member near the ends of two arms of that member which extend on opposite sides of the motor. Both horizontal pivots are provided with rubber bushes which may be arranged in a manner similar to that described above.

According to a feature of the invention two or more vibration isolating means are arranged in series. Thus in the embodiments described above between the motor and the table or other object on which the fan stands are the bush or bushes and the studs. If desired in the modified arrangement a further vibration isolating means may be provided in the form of a rubber bush at the vertical pivot.

Means may be provided for compressing a bush longitudinally and for varying the degree of compression.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. An electric fan comprising an electric motor and a base or support for the motor, wherein the connection between the motor and the base includes vibration isolating means.

2. An electric fan comprising an electric motor and a base or support for the motor, wherein interposed between the base and a part of or associated with the motor adapted to cooperate with the base are resilient vibration damping means.

3. An electric fan comprising an electric motor rotatably mounted about an axis on a base or support, wherein the pivot or each pivot on the axis is provided with a bush or lining of rubber or like equivalent material separating the complementary parts of the pivot.

4. An electric fan as claimed in Claim 3, wherein a clamping screw for securing the motor in a selected position relatively to the base or support is arranged to bear on a guard such as a segment of steel disposed between the end of the screw and the outer face of the bush with which the clamping screw is associated.

5. An electric fan substantially as hereinbefore described with reference to the accompanying drawings.

Dated the 3rd day of October, 1932.

For the Applicants,
A. C. PRICE,
Chartered Patent Agent.

Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1933.